

Math 129 - Pre-Calculus, Fall 2026

Course Syllabus

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Office: Learning Resource Center 323J

Office hours: Mon 2-3, Tues 12-1, Wed 2-3, Thurs 11-1, Fri 12-1

Class Room/Time: INN-B 211, MTWRF 10:00-10:50 am

Course website: community.wvu.edu/~bal0018/math129F26.html (as a backup website, I will also try to keep the eCampus site updated)

Course announcements will be posted on the website. Please be sure to check the website regularly, and to regularly check the email address you have on record. You are responsible for any information posted on the course website.

Textbook: Jay Abramson, *Algebra and Trigonometry*, available to download for free at <https://openstax.org/details/books/algebra-and-trigonometry-2e>.

Catalog Data: MATH 129 Pre-Calculus Mathematics (4-1) Credits 4. A treatment of algebra, analytic geometry and trigonometry.

Prerequisite: ACT math at least 25, SAT math at least 590, or ALEKS math at least 60.

Course material: This course covers the algebra skills and trigonometry content necessary to begin a study of calculus. The first half of the course will focus on solving equations and inequalities and on understanding different types of functions, while the last half will introduce trigonometric functions and their applications. A rough schedule of the topics covered can be found on the last page.

Course Objective: Upon completion of this course the student should have good algebraic manipulation skills, and a basic knowledge of trigonometry, polar coordinates, and complex numbers.

Learning Outcomes: Upon completion of the course, the student will be able to do the following:

1. Use the laws of exponents, and manipulate and simplify algebraic expressions containing fractional exponents, negative exponents, radicals, and fractions.
2. Solve algebraic and trigonometric equations, inequalities, and systems of equations.
3. Sketch graphs of algebraic and trigonometric functions.
4. Find the composition of functions, the inverse of a function, and the domain and range of a function.
5. Evaluate and graph trigonometric functions, particularly sinusoidal curves.
6. Use basic trigonometric identities and inverse trigonometric functions to simplify expressions and solve equations.
7. Solve right and oblique triangles.
8. Use the trigonometric form of a complex number to compute products, quotients, powers, and roots of complex numbers.
9. Convert from polar coordinates to rectangular coordinates and vice versa.

Grading: This course combines the course material from MATH 126 and MATH 128. Therefore, MATH 129 is taught as two courses that you get one combined grade for. You must demonstrate knowledge of both algebra and trigonometry to pass the course. To that end, there will be a comprehensive algebra exam held during week 9, and a comprehensive trigonometry exam held during the week of final exams. Failure to record at least a 60% grade on either of these comprehensive exams will disqualify you from receiving a C or higher in the course, which is the necessary grade to take the calculus sequence.

Besides those two cumulative exams, your final grade will also be based on homework, quizzes, and two other ordinary exams during the semester. Your final course score will be the maximum of the following two grading schemes:

- 10% Homework + 5% Attendance + 5% Quizzes + 15% Exam 1 + 15% Exam 3 + 25% Algebra Comprehensive Exam + 25% Trig Comprehensive Exam
- 10% Homework + 5% Attendance + 5% Quizzes + 20% (higher grade of the two ordinary exams) + 30% Algebra Comprehensive Exam + 30% Trig Comprehensive Exam

For everyone who records at least a 60% or better on each comprehensive exam, letter grades will be assigned using the full grading scheme(s) and the following cutoffs:

A: 90%, B: 80%, C: 70%, D: 60%, F: below 60%

Homework: Homework will be completed online with MyOpenMath.com. When you sign-up, you will use the Course ID and Enrollment Key given in class and posted on the eCampus site. Homework assignments will be due most Fridays. Note that most problems on the homework assignments may be resubmitted as often as needed until they are correct, so you should strive for a homework percentage near 100%!

A note about the homework: the only real point of the homework is for you to do it. The time you spend thinking, trying things, getting wrong answers, and (hopefully) getting right answers is the purpose of the homework. The exams are where your course grade will really be decided, and the homework is your training for the exams. Don't skip your training!

Attendance: Attendance will count for credit beginning on Monday, August 31. From that point on, there will be approximately 65 lectures. If you miss no more than 7 of those lectures, you will maintain your full 5% for attendance. If you miss 8 or more lectures, you will lose one percentage point for each two lectures missed. (Note: Excused absences such as participation in athletics or clubs will not count toward your total of absences.)

Quizzes: There will be a quiz given most weeks in which there is no exam. This will be a very brief quiz given at the beginning of class, intended to test you with more immediacy than the exams and with less consequence. The problems that appear on the quiz will be taken from the homework problems I assign. Only your best 5 quizzes will count toward your grade, and there will be absolutely NO make-up quizzes.

Exams: The first algebra exam, which I will call Exam 1, is tentatively scheduled for Wednesday, September 16. The algebra cumulative exam will be a two-day exam, tentatively scheduled for Tuesday, October 20 and Wednesday, October 21. The first trigonometry exam, which I will call Exam 3, is tentatively scheduled for Wednesday, November 11. These will be 50 minute exams taken during the regular lecture time. The trig cumulative exam will be given during the course final exam time, which has been set by the university, and will be Monday, December 7 from 10:00-11:50 am. Make-up exams will only be given to students with excused absences, and such make-up exams must be scheduled within 24 hours of the missed exam.

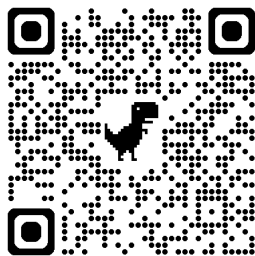
Getting Help: Always remember: asking for help when you need it is not a sign of weakness, but a sign of strength! Please feel free to attend my office hours or email me if you have questions about the course material. If you are unable to make it to my regularly scheduled office hours, I am willing to make an appointment to meet at another time if possible. Free tutoring is also available through the Student Success Center, located in the library on the second floor of LRC. You should also find out if you qualify for TRIO SSS, located in Benedum 100, which also provides tutoring services. Additionally, for quick math questions, you can feel free to stop by the Math Department in LRC 323 and ask any math professor with an open door. Finally, I would also encourage the formation of study groups, to learn from each other and help each other learn.

Class policies:

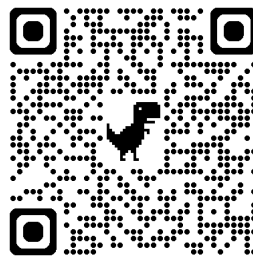
- Graphing or programmable calculators will never be allowed during any exams. Scientific calculators will be considered on an exam by exam basis. You may use any calculator to help you do the homework if you wish, but you should keep in mind that you may be required to solve similar problems without a calculator on the quizzes and exams.
- If you believe a problem on a homework assignment or midterm exam has been graded incorrectly, you must notify the instructor of your complaint within 7 days of the date the exam is handed back. If you are unable to retrieve your graded material at the time it is handed back, it is your responsibility to make arrangements with the instructor to retrieve the material at another time.

Institutional Policies: Students are responsible for reviewing policies on inclusivity, academic integrity, incompletes, sale of course materials, sexual misconduct, adverse weather, student evaluation of instruction, and other statements. For these detailed policies of West Virginia University, please review:

<https://facultysenate.wvu.edu/resources/syllabus-policies-and-statements>.



QR Code for Course Website



QR Code for MyOpenMath

Date	Topic	Date	Topic
18-Aug	Syllabus and Prereqs	22-Oct	7.1: Angles
19-Aug	2.2: Solving Basic Linear/Rational/Power Equations	23-Oct	7.3/7.4: Unit Circle Trigonometry
20-Aug	2.5: Quadratic Equations - Factoring/Completing the Square	26-Oct	7.3/7.4: Unit Circle Trigonometry
21-Aug	2.5: Quadratic Equations - Quadratic Formula	27-Oct	7.2: Right Triangle Trigonometry
24-Aug	2.4: Complex Numbers as Solutions to Quadratic Equations	28-Oct	7.2: Right Triangle Trigonometry
25-Aug	2.6: Solving Other Types of Equations	29-Oct	8.1: Graphs of Sinusoidal Functions
26-Aug	2.6: Solving Other Types of Equations	30-Oct	8.1: Graphs of Sinusoidal Functions
27-Aug	2.7: Solving Linear and Absolute Value Inequalities	2-Nov	8.2: Graphs of Other Trigonometric Functions
28-Aug	Solving Polynomial and Rational Inequalities	4-Nov	8.3: Inverse Trigonometric Functions
31-Aug	Solving Polynomial and Rational Inequalities	5-Nov	8.3: Inverse Trigonometric Functions
1-Sep	2.1: Rectangular Coordinates, Graphs, Distance Formula, and Circles	6-Nov	9.5: Solving Basic Trigonometric Equations
2-Sep	2.2: Equations and Graphs of Lines	9-Nov	9.5: Solving Basic Trigonometric Equations
3-Sep	2.2: Equations and Graphs of Lines	10-Nov	Review
4-Sep	11.1/11.2: Systems of Linear Equations	11-Nov	Exam 3
8-Sep	3.1: Introduction to Functions and Graphs of Toolkit Functions	12-Nov	9.1: Verifying and Using Trigonometric Identities
9-Sep	3.2: Domains and Ranges of Functions, Piecewise-Defined Functions	13-Nov	9.1: Verifying and Using Trigonometric Identities
10-Sep	3.3: Using Graphs to Learn about Functions, Rates of Change	16-Nov	9.2/9.3/9.4: Common Identities and Their Uses
11-Sep	3.4: Compositions of Functions	17-Nov	10.1: Solving Triangles with Law of Sines
14-Sep	3.7: Inverse Functions	18-Nov	10.1: Solving Triangles with Law of Sines
15-Sep	Review	19-Nov	10.2: Solving Triangles with Law of Cosines
16-Sep	Exam 1	20-Nov	10.3/10.4: The Polar Coordinate System
17-Sep	3.5: Transformations of Functions and Graphs	30-Nov	10.5: Polar Form of Complex Numbers
18-Sep	3.5: Transformations of Functions and Graphs	1-Dec	10.5: Polar Form of Complex Numbers
21-Sep	5.1: Quadratic Functions and their Graphs	2-Dec	10.8: Vectors
22-Sep	5.2: Polynomial Functions, and Graphs of Monomial Functions	3-Dec	10.8: Vectors
23-Sep	5.3: Graphs of Polynomial Functions	4-Dec	Review
24-Sep	5.3: Graphs of Polynomial Functions		
25-Sep	5.4: Dividing Polynomials		
28-Sep	5.5: Zeros of Polynomial Functions		
29-Sep	5.5: Zeros of Polynomial Functions		
30-Sep	5.6: Graphs of Rational Functions		
1-Oct	5.6: Graphs of Rational Functions		
2-Oct	5.6: Graphs of Rational Functions		
5-Oct	6.1/6.2: Exponential Functions and their Graphs		
6-Oct	6.1/6.2: Exponential Functions and their Graphs		
7-Oct	6.3/6.4: Logarithmic Functions and their Graphs		
8-Oct	6.5: Laws of Logarithms		
12-Oct	6.6: Solving Exponential and Logarithmic Equations		
13-Oct	6.6: Solving Exponential and Logarithmic Equations		
14-Oct	6.6: Solving Exponential and Logarithmic Equations		
15-Oct	Catch-Up/Review		
16-Oct	Review		
19-Oct	Review		
20-Oct	Comprehensive Algebra Exam, Part 1		
21-Oct	Comprehensive Algebra Exam, Part 2		